Type.—Female, U.S.N.M. Type No. 70976.

Type locality.—St. Thomas Island, West Indies.

Cyrtonota cyanea (L.) is from Brazil and up to now only one species of the genus, (tristigma Boh. from Central America and Mexico) has been found north of South America. The single specimen collected on St. Thomas island is similar to the Brazilian specimens of cyanea in the U.S.N.M. collection in size, shape and coloring. The main difference is in the reticulations on the elytra. These are much smaller and more numerous than on the Brazilian specimens, and moreover, although reduced, are plainly distinct to the margin, which is not the case in the Brazilian specimens. The punctation on the pronotum in the Brazilian specimens although fine is more apparent than on the pronotum of the West Indian specimen.

### Paratrikona rubescens Blake

(Fig. 16)

Paratrikona rubescens Blake, 1939, Proc. Ent. Soc. Wash. 41(8):238,

I described this species from two specimens that were collected by P. J. Darlington, Jr., who wrote that in life they were "rather deep red with conspicuous white blotches irregularly arranged. . ." On the dried specimens, however, only a slight trace of white marking remained, so that in my illustration the beetle appears entirely dark. Thirty years later several specimens have come to my attention from the collection of Dr. Eugenio de Jesus Marcano, of the University of Santo Domingo, Dominican Republic. These were collected in Arroya de Toro, Quebrada Honda, Dominican Republic. Darlington collected his specimens in Jarabacoa in a deep forest at 1400–4000 ft. elevation. These recent specimens show the white markings clearly and because my early illustration is misleading in that I gave no indication of the white blotches, I have made another figure to correct it.

# KEY TO AMERICAN SPECIES OF THE GENUS MEZIRA (Hemiptera: Aradidae)

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ABSTRACT—The key separates all but two species, horvathi (Bergroth) and novella Blatchley, of the 89 species and two varieties from the Americas assigned to the genus Mezira.

During the last few years the number of American members of the genus Mezira Amyot and Serville has increased by 26 species and two

varieties making obsolete my last key (1962, p. 260) to the American species of the genus. *Mezira* is the largest and commonest genus of American Mezirinae. To make identifications easier, I am offering a new, revised key to its 89 species and two varieties: *Mezira horvathi* (Bergroth), 1889, from Brazil and *Mezira novella* Blatchley, 1924, from southern U. S. A., are again omitted as unidentifiable (also omitted from my 1962 key).

### KEY TO AMERICAN Mezira SPECIES

1.	Membrane abbreviated, reaching to hind border of tergum IV; connexiva II and III fused together (Jamaica)
	brachyptera Kormilev, 1964c
	Membrane complete, always surpassing fore border of tergum VI; connexiva II and III separated
2(1).	Basal angles of scutellum with yellow tubercles, often covered with yellow, curled hairs3
	Basal angles of scutellum without such tubercles
3(2).	Lateral borders of abdomen strongly convex; larger species, over 8.0 mm4
	Lateral borders of abdomen only slightly convex; smaller species, less than 7.0 mm5
4(3).	Labium long, reaching beyond fore border of prosternum; antennae and legs with pale rings (Colombia) bouvieri (Bergroth), 1893
	Labium short, not reaching hind border of head; antennae and legs without pale rings (West Indies, Central America)
	abdominalis (Stål), 1873
5(3).	Spiracles VII sublateral, or placed near border; lateral notch of pro-
	notum without a projecting lobe6
	Spiracles VII ventral, placed far from border; lateral notch of pronotum with a prominent, flattened lobe bearing radiating ridges (Argentina)birabeni Kormilev, 1953
6(5).	Spiracles VIII lateral and visible from above; 4 (2 + 2) ridges of pronotum each with 2 tubercles; connexivum nearly unicolorous but with brown, round, calloused spots (Brasil)
	gradata (Bergroth), 1889
	Spiracles VIII dorso-lateral, not visible from below; $4(2+2)$ ridges
	of pronotum without tubercles; connexival segments each pale
	brown with lateral margin blackened and apical margin yellow, but
	without round, brown spots (Brasil) luteonotata Kormilev, 1964a
7(2).	Spiracles VII sublateral, or placed near border8
. ( = / .	Spiracles VII ventral, placed far from border 22
8(7).	Pronotum not, or scarcely sinuate laterally 9
0(1).	Pronotum distinctly constricted, or sinuate laterally
9(8).	Body long and narrow, with parallel sides; paratergites ( $\mathfrak{P}$ ) as long
0(0).	as segment IX (Argentina) formosa Kormilev, 1953
	Body elongate ovate, with more or less convex sides; paratergites
	( 2 ) much shorter than segment IX

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9).	Antennal segment III as long as IV, or shorter
	kjellanderi Kormilev, 1962
10).	Antennal segment III as long as IV (11:11) (Bolivia)
- , .	bridarollii Kormilev, 1960a
	Antennal segment III shorter than IV (5:6.5) (Brasil)
	gracilis Kormilev, 1968c
3).	Anterior process of head reaching, or almost reaching, tip of antennal
	segment I
	Anterior process not reaching tip of antennal segment I
l2).	Postocular tubercles produced beyond outer border of eyes
	Postocular tubercles at most reaching outer border of eyes15
13).	Antennae shorter, less than 1.5 times as long as width of head across eyes; antennal segment III as long as IV (7:7) (Peru)
	inca Kormilev, 1960b
	Antennae longer, more than 1.6 times as long as width of head across
	eyes; antennal segment III much longer than IV (15:10) (Peru)
	armata Kormilev, 1964b
13).	Pronotum deeply sinuate laterally, antero-lateral angles subangular (Central America)rugiventris (Champion), 1898
	Pronotum slightly sinuate laterally, antero-lateral angles rounded 16
(5).	Connexivum light brown, each segment with an elongate black dash
.0).	basolaterally (Brasil) flavicans (Stål), 1860
	Connexivum unicolorous brown (Mexico) championi Kormilev, 1964a
12).	Postocular tubercles produced beyond outer border of eyes18
,.	Postocular tubercles at most reaching outer border of eyes21
17).	Antennae slender; postocular tubercles only slightly produced beyond
,	outer border of eyes
	Antennae stout; postocular tubercles distinctly produced beyond
	outer border of eyes
18).	Larger species, over 5 mm; genae angular anteriorly; antennal seg-
	ment I as long as III (10:10) (Central America)
	angustata (Champion), 1898
	Smaller species, less than 4.5 mm; genae rounded anteriorly; antennal
	segment I shorter than III (8:9.5) (Guatemala)
	pusilla Kormilev, 1968
18).	Pronotum deeply sinuate laterally, antennal segment I and III sub-
	equal in length; segment IX (2) truncate posteriorly (Guate-
	mala) divisa (Champion), 1898
	Pronotum slightly sinuate laterally, antennal segment I shorter than
	III; segment IX ( 2 ) notched posteriorly (Guatemala)
	naua (Champion), 1898

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21(17). Larger species, over 7.5 mm; body incrustated from above and beneath (Central America, South America)

handlirschi (Bergroth), 1898 Smaller species, less than 6.0 mm; body not incrustate (Mexico) ......

yucatana (Champion), 1898

22(7).	Spiracles VIII sublateral, lateral, or dorso-lateral, and visible from above	3
	Spiracles VIII ventral, or sublateral, but not visible from above 4	
23(22).	Connexivum bicolored, or at least PE-angles of connexival segments	
-3(22).	are of different color than discs	4
	Connexivum unicolored3	
24(23).	Postocular tubercles at most reaching outer borders of eyes2	
24(20).	Postocular tubercles at most reaching outer borders of eyes	
25(24).		•
20(24).	beyond collar; lateral pronotal notch rectangular; segment IX ( ? )	
	incised posteriorly (Brasil)	ດ
	Antero-lateral angles or pronotum rounded, or angular, but not pro-	4
	duced beyond collar as rounded lobes; lateral pronotal notch form-	
	ing an obtuse angle, or rounded; segment IX ( $\mathfrak{P}$ ) truncate 20	G
26(25).	Antero-lateral angles of pronotum expanded and rounded, lateral	U
20(23).	notch forming an obtuse angle; spiracles VIII sublateral and	
	slightly visible from above (Peru) halaszfyi Kormilev, 1960	ı.
	Antero-lateral angles of pronotum forming a right angle, neither pro-	0
	duced forward, nor sideways; lateral borders sinuate; spiracles	
	VIII lateral and clearly visible from above (Peru)	
	amazonica Kormilev, 196	2
27(24).	Hypopygium ( & ) cordate (Venezuela) barberi Kormilev, 1964	
2. (21).	Hypopygium (3) globose2	
28(27)	Hypopygium wider than head across eyes (28:25) (Central America,	
20(21).	South America) regularis (Champion), 189	8
	Hypopygium at most as wide as head across eyes (22:22)	
29(28).	Head relatively wider, ratio length: width across eyes as 27:32;	
	hypopygium ( 3 ) with a subtriangular, median ridge not reaching	
	apex of disc (Brasil)romani Kormilev, 196	2
	Head relatively narrower, ratio length: width across eyes as 27.5:30;	
	median ridge of hypopygium with parallel sides, reaching tip of	
	disc (Mexico)variegata Kormilev, 1968	b
30(23).	Jugae very long, dentiform and bent downward as tusks (Cuba)	
	cubana Kormilev, 1960	С
	Jugae normal, not bent downward3	
31(30).	Spiracles VIII dorso-lateral (Guatemala) constricta (Champion), 1898	8
	Spiracles VIII lateral	
32(31).	Pronotum not sinuate laterally 33	3
	Pronotum more or less sinuate laterally 40	0
33(32).	Body with parallel sides 3-	4
. ,	Body with more or less convex, rounded sides 36	6
34(33).	Pronotum as wide as abdomen; paratergites (♀) reaching middle of	
	segment IX (Brasil)ligneola (Bergroth), 189-	4
	Pronotum slightly narrower than abdomen; paratergites ( 2 ) almost	
	reaching tip of segment IX	5
35(34).	Larger species, over 7.5 mm; antennal segement I much shorter than	
	III (11:15) (West. U. S. A.) reducta Van Duzee, 1927	7
	Smaller species, less than 6.0 mm; antennal segment I slightly longer	
	than III (Argentina) vianai Kormilev, 1950	3

36(33).	All ridges on pronotum obsolete or absent; paratergites ( 2 ) longer than segment IX (Brasil, Argentina) reuteri (Bergroth), 1880
	Ridges on pronotum always prominent; paratergites ( $\mathfrak P$ ) shorter, or as long as segment IX
37(36).	Larger species, over 7.0 mm (West. U. S. A.)pacifica Usinger, 1936 Smaller species, less than 6.5 mm
38(37).	Apical angle of corium rounded; paratergites (♀) reaching tip of segment IX (Bolivia)andina Kormilev, 1965 Apical angle of corium angular, or subangular; paratergites (♀)
39(38).	reaching middle of segment IX
	Anterior process long, reaching tip of antennal segment I; antennal segment III much longer than IV (9.5:6.5) (Brasil) timida Kormilev, 1968c
40(32).	Postocular tubercles produced far beyond outer borders of eyes 41 Postocular tubercles not produced, or only slightly produced beyond outer borders of eyes 42
41(40).	Head distinctly shorter than width across eyes (18:22); pronotum slightly sinuate laterally; ridges of pronotum poorly developed; granulation fine (Brasil) sangabriclensis Kormilev, 1962
	Head as long as width across eyes (17:17); pronotum strongly sinuate laterally; its ridges very prominent; granulation rough42
42(41).	Antennal segment I slightly longer than III (10:9); body covered with short, curled hairs (Argentina) tartagalensis Kormilev, 1953 Antennal segment I distinctly shorter than III (15:17.5); body covered with long, erect bristles as well as short, curled hairs (Mex-
43(40).	pilosa Kormilev, 1968c Postocular tubercles very small, not reaching outer borders of eyes 44 Postocular tubercles small, but slightly produced beyond outer borders.
44(43).	ders of eyes
45(43).	Larger species, over 7.0 mm; anterior process of head almost reaching tip of antennal segment I (U. S. A., Mexico)
	Smaller species, less than 6.5 mm; anterior process of head reaching at most ¾ of antennal segment I
46(45).	Lateral borders of pronotum slightly sinuate; anterolateral angles rounded, but not lobate (Mexico)
47(46).	Connexivum incrustate above and beneath; anterior lobe of pronotum narrower than hind lobe (43:50); all carinae on pronotum

	very sharp, covered with curled, incrustate, yellow hairs (Venezuela)samartini Kormilev, 1968a
	Connexivum without incrustation; fore lobe of pronotum much narrower than hind lobe (43:53); all carinae less sharp, curled hairs without incrustation
48(47).	Antennal segment I distinctly shorter than III (10:12.5); paratergites (?) shorter, reaching at most middle of segment IX; median ridge of hypopygium (3) reaching, or almost reaching tip of disc (Mexico) ————————————————————————————————————
	tergites (\$) longer, reaching % of segment IX; median ridge of hypopygium (\$) reaching % of disc (Brasil)
19(22).	Anterior process of head reaching, almost reaching, or produced beyond tip of antennal segment 150
50(49).	Anterior process reaching at most ¾ of antennal segment I
	Postocular tubercles larger, almost reaching, reaching or produced beyond outer borders of eyes; venter normal, scabrous
51 (50).	Connexivum and venter with round, redbrown, or yellowbrown, calloused spots52
	Connexivum and venter without such spots 53
52(51).	Larger species, over 10 mm; black, base of membrane with a V-form, white spot; connexivum with PE-angles and round, callous spots redbrown, or yellowbrown (Colombia, Bolivia)
	punctiventris (Stål), 1873 Smaller species, less than 7.0 mm; brown, base of membrane without V-form, white spot; connexivum tricolored: redbrown, outer border black, and PE-angles and round, callous spots, yellowbrown (Paraguay)paraguayensis Kormilev, 1968a
53(51).	Connexivum unicolor
54(53).	Postocular tubercles reaching outer border of eyes; paratergites (\$\mathbb{Q}\$) large, as long as segment IX (Chile, Patagonia) americana (Spinola), 1852
	Postocular tubercles produced beyond outer borders of eyes; paratergites (\$\omega\$) reaching only middle of segment IX (Brasil)
55(53).	Median ridge of hypopygium ( & ) evenly raised backward 56 Median ridge of hypopygium, if any, horizontal 57
56(55).	
	and width of head across eyes as 1.35:1 (Brasil, Uruguay)

57(55).		58
58(57).	Head short, ratio between length and width across eyes as 1:1.18	59
	(British Guiana) <b>guianensis</b> Kormilev, 196 Head almost as long as width across eyes 1:1.07 (Argentina)	4;
	saltensis Kormilev, 19	53
59(57).	Anterior process of head reaching, or almost reaching, tip of antennal segment 1; hind lobe of pronotum not dilated anteriorly	60
	Anterior process produced beyond tip of antennal segment I; hind lobe of pronotum dilated anteriorly (Guatemala)	
00/80)	maculiventria (Champion), I8	98
60(59).	Larger species, over 7.5 mm (♀); head wide, ratio between length and width across eyes as 1:1.17; pronotum short and wide, ratio	
	length:width as 1:2 (Brasil) eurycephala Kormilev, 196	0ε
	Smaller species, less than 6.5 mm ( $\circ$ ); head narrow, ratio between length and width across eyes as 1:1.14; pronotum longer and narrow.	
61(49).	rower, ratio length:width as 1:1.18 (Brasil) carioca Kormilev, 196 Postocular tubercles slightly produced beyond outer border of eyes	4a 62
01(40).		6£
62(61).		63
		64
63(62).	Larger species, over 7.5 mm; granulations of the body very coarse, forming rows, or groups; head as long as width across eyes (Brasil,	
	Uruguay, Paraguay, Argentina) granuligera (Stål), 18	60
	Smaller species, less than 6.0 mm; granulations fine and evenly distributed; head much shorter than width across eyes (24:27)	
61/60)	(Brasil) costalimai Kormilev, 196	48
64(62).	ratio between length of segments I and III as 1:1.3	65
	Small species, length less than 6.0 mm; antennal segment I longer, ratio between length of segments I and III as 1:1.15 (Argentina)	
	spissigrada Kormilev, 196	റം
65(65).	• •	Oto
	paratergites (\$\varphi\$) large, rounded, reaching \(\frac{1}{2}\) of a small segment	
	IX (Central America) neotropicalis (Champion), 18	98
	Lateral borders of pronotum only slightly sinuate; paratergites (♀)	
	shorter, reaching basal 1/3 of segment IX (Mexico)	O.
ec/el)	nasalis Kormilev, 1966	
00(01).		67 68
67(66)	Larger species, over 8.0 mm; segment IX (♀) truncate posteriorly	UC.
0.(00).	(Argentina, Brasil) paragranuligera Kormilev, 193 Smaller species, less than 7.0 mm; segment IX (\$\phi\$) small, subtri-	53
	angular (Jamaica)	06
68(66).	Body covered with long, erect bristles (Mexico)	
	longipilis (Champion), 189	
en/ee\	Body with short, curled or erect hairs	
69(68).		70 79
	opriacies viti ventral, piaceu further from margin	10

70(69).	Anterior process of head very short, reaching at most ½ of antennal segment I
	Anterior process of head longer, reaching at least ½ of antennal seg-
71(70).	ment I
	obscura (Distant), 1893
	Antennal segment I as long as III (Guatemala) lata (Champion), 1898
72(70).	Anterior process of head longer, reaching % of antennal segment I 73
70/70)	Anterior process reaching only ½ of antennal segment I
73(72).	Head as long as width across eyes 74 Head distinctly shorter than width across eyes 75
74(73).	Larger species, over 8.0 mm; antennal segment I much longer than
14(13).	III (20:15.5) (Venezuela)
	Smaller species, less than 7.5 mm; antennal segment I shorter than
	III (12.5:15) (Mexico)
	a. Second valvifer normal occidentalis s.str.
	Second valvifer with a finger-shaped appendix
	var. appendiculata Kormilev, 1968b
75(74).	Antennal segment I distinctly shorter than III (12:15)
	Antennal segment I only slightly shorter than III (10:11) (Puerto Rico, Haiti) placida Kormilev, 1968a
	a. Median ridge of hypopygium reaching ¾ of disc (Puerto
	Rico) placida s.str.
	Median ridge of hypopygium almost reaching tip of disc (Haiti)var, haitiensis Kormiley, 1968a
76(75).	Antennal segment I distinctly longer than IV (12:10) (Mexico)
	Antennal segment I as long as IV (8:8) (U. S. A.)
/ >	granulata (Say), 1832
77(72).	Lateral borders of pronotum only slightly sinuate; $4(2+2)$ ridges
	of pronotum weak; postocular tubercles reaching outer borders of eyes (Mexico)
	Lateral borders of pronotum distinctly constricted; $4(2+2)$ ridges
	of pronotum sharp; postocular tubercles not reaching outer bor-
	ders of eyes
78(77).	Antennal segment I shorter than III (10:11.5); paratergites (2) very short, reaching basal ¼ of segment IX (Costa Rica)
	paralata Kormilev, 1964a
	Antennal segment I longer than III (15:13); paratergites (\$\varphi\$) sub-
	triangular, reaching ½ of segment IX (Trinidad)
	triangular, reaching 72 of segment 1A (17midad)
79(69).	Large species, length over 7.0 mm 80
10(00).	Small species, length over 7.0 mm 84
80(79).	Antennae longer, almost twice as long as head wide across eyes
00(10).	(64:34)
	Antennae shorter, ratio length of antennae: width of head across
	eyes as 5:382

81(80).	Head as long as width across eyes; antennal segment I much longer than II (18:12.5) (U. S. A., Canada)lobata (Say), 1832
	Head distinctly shorter than width across eyes (32.5:35); antennal segment I moderately longer than II (17.5:14) (Mexico)
82(80).	Anterior process of head short, reaching at most % of antennal segment I; antero-lateral angles of pronotum produced forward as far as collar; tergum VIII (\$\mathbb{Q}\$) deeply sinuate posteriorly, segment IX truncate (Mexico)
	antero-lateral angles of pronotum produced beyond collar; tergum VIII (♀) weakly, if any, sinuate posteriorly, segment IX rounded posteriorly 83
83(82).	Wide species, ratio length:width of the body as 2.33:1; anterior process of head reaching at least ¾ of antennal segment 1; antenniferous tubercles very wide at base; antero-lateral angles of pronotum evenly rounded, crenulate (Bolivia, Colombia, Brasil)
	Narrow species, ratio length: width of the body as 2.44:1; anterior process reaching at most ¾ of antennal segment I; antenniferous tubercles narrow at base; antero-lateral angles of pronotum more produced forward than sideways (Argentina, Bolivia, Brasil)
84(79).	Head at least as long as width across eyes85
	Head distinctly shorter than width across eyes
85(84).	Head longer than width across eyes (30:27.5); antennal segments I and III equal in length (Ecuador) ecuatoriana Kormilev, 1968a
	Head as long as width across eyes; antennal segment I shorter than III
86(85).	Larger species, over 7.0 mm; antennal segment I distinctly shorter than III (8:13); body not incrustate (West. U. S. A.)
	Smaller species, less than 7.0 mm; antennal segment I only slightly shorter than III (9:10); body incrustate above and beneath (Para-
87(84).	guay, Argentina, Brasil)
	Antennal segment I slightly shorter than III (8:9), II at most as long as IV; all 4 ridges of pronotum equal in height
88(87).	Large species, over 6.5 mm; anterior process of head reaching % of antennal segment I; postocular tubercles reaching outer borders of eyes (Argentina) bruchi Kormilev, 1953 Small species, less than 6.0 mm; anterior process reaching % of an-
	tennal segment I; postocular tubercles reaching, or mostly pro- duced beyond outer borders of eyes (Argentina)
	bonaerensis Kormilev, 1960a

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## NORTH AMERICAN GRASSHOPPERS OF THE GENUS ARGIACRIS, INCLUDING TWO NEW SPECIES FROM IDAHO

(ORTHOPTERA: ACRIDIDAE: CATANTOPINAE)

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ABSTRACT—The genus Argiacris comprises four species and one additional subspecies of brachypterous catantopine grasshoppers superficially resembling certain species of Melanoplus. They are as follows: A. relmi Hebard, southcentral Montana; A. militaris militaris (Scudder), militaris laticerea, n. subsp., keithi, n. sp., and amissuli, n. sp., from central Idaho. Except for amissuli, the Idaho species all occur above 8,000 feet in habitats of scant vegetation. A. amissuli and rehni occur at about 5,000 feet elevation, in a zone which includes some sagebrush.

In comprehensive ecological and systematic surveys of Idaho grass-hoppers during recent years by Merlyn A. Brusven, Department of Entomology, University of Idaho, Moscow, and Keith Evans, Plant Protection Division, U.S. Department of Agriculture, Twin Falls, Idaho, and their associates, several collections of the poorly known genus Argiacris have been made. In August 1969 I was privileged to spend a week with them in a variety of Idaho habitats, and additional collections of the genus were made. Then, in August 1970, Brusven, Evans and Allen C. Scoggan spent several days on a pack trip in the area about 25 miles northwest of Stanley, Idaho, and collected a large number of A. militaris at numerous points, so it is now possible to provide a synopsis of the several known species.

Argiacris was established by Hebard (1918), and its relationships were discussed briefly by Rehn and Randell (1963) and Gurney and Rentz (1964). The species resemble superficially some brachypterous species of *Melanoplus*, but especially when compared with the type

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